

Kennedy NASA Procedural Requirements

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Responsible Office: Safety and Mission Assurance

Examination and Licensing of KSC Operators of Special and Heavy Equipment, Facility Cranes, and Hoists

**National Aeronautics and
Space Administration**

John F. Kennedy Space Center

Change Log

Date	Revision	Description
11/19/09	Basic	Initial Release
12/5/14	Basic-1	This document has been extended pending rewrite and Center review.
2/10/15	A	Updated to indicate appropriate authority document (P.3), the proper authority/authorization for lifting devices and equipment policy (section 1.3), appropriate method for updating the document (section 1.5), and to remove Space Shuttle references and make minor editorial changes. Updated to comply with NPR 1400.1, NASA Directives and Charters Procedural Requirements.
11/19/2019	B	Updated all reference hyperlinks, Safety and Mission Assurance Director signature line (section P.6), and directorate names (Chapter 2 paragraph b). Removed reference to Health Examination Request and Report KSC Form 13-116 (Chapter 2 section 4). Renumbering document to comply with NPR 1400.1, NASA Directives and Charters Procedural Requirements.

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PREFACE

P.1 Purpose

- a. This directive implements requirements of [NASA-STD-8719.9, NASA Lifting Standard](#), establishes John F. Kennedy Space Center (KSC) policy, assigns organizational and personal responsibilities, and provides general provisions for the control and issuance of KSC licenses for operators of KSC-owned or -leased special and heavy equipment, facility cranes, and hoists.
- b. [NASA-STD-8719.9](#) requires all operators of lifting devices such as cranes and derricks, hoists and winches, powered industrial trucks, special hoist-supported personnel lifting devices, mobile aerial platforms, etc. be trained and licensed prior to operating the lifting device. Further, it is KSC policy that all operators of other special and heavy equipment (as specified in [Appendix B](#)) be trained and licensed before operating KSC-owned or -leased special and heavy equipment. Responsible KSC organizational elements shall implement this directive via the respective contract.

P.2 Applicability

- a. This directive applies to all KSC organizational elements with management control of KSC-owned or leased special and heavy equipment, facility cranes, and hoists, and to their associated contractors to the extent specified in their respective contracts. Equipment categories are listed in [Appendix B](#). Excluded from this directive are licensing processes for general purpose motor vehicles. This directive does not apply to equipment undergoing acceptance testing prior to turnover of the equipment to the Operations and Maintenance (O&M) organization, nor does it apply to KSC-owned or non-KSC-owned assets leased to commercial entities.
- b. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term “shall.” The terms “may” or “can” denote discretionary privilege or permission, “should” denotes a good practice and is recommended, but not required, “will” denotes expected outcome, and “are/is” denotes descriptive material.
- c. In this directive, all document citations are assumed to be the latest version unless otherwise noted.

P.3 Authority

- a. [NPR 8715.3, NASA General Safety Program Requirements](#)
- b. [NASA-STD-8719.9, NASA Lifting Standard](#)

P.4 Applicable Documents and Forms

[KNPR 8715.3-1, KSC Safety Procedural Requirements, Volume 1: Safety Procedural Requirements for Civil Servants/NASA Contractors](#)

P.5 Measurement/Verification

Compliance with the requirements contained in this Kennedy NASA Procedural Requirements (KNPR) will be verified through normal surveillance, audit, and assessment activities performed by the NASA Safety and Mission Assurance (S&MA) organization.

P.6 Cancellation

This revision cancels KNPR 8719.9, Rev. A, Examination and Licensing of KSC Operators of Special and Heavy Equipment, Facility Cranes, and Hoists.

/original signed by/

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Director, Safety and Mission Assurance

Distribution: TechDoc Library

CHAPTER 1. GENERAL DOCUMENT INFORMATION

1.1 Goal

1.1.1 It is the goal of NASA and KSC to provide safe and reliable systems, to avoid loss of life or injury to personnel, and to avoid loss or damage to program hardware and KSC facilities. To achieve this goal, KSC strives to provide and maintain safe, reliable ground support equipment and facility systems and perform operations in a manner that minimizes risk.

1.1.2 This directive establishes training and licensing requirements for operators of KSC-owned or -leased special and heavy equipment, facility cranes, and hoists to ensure these systems are operated in a safe manner.

1.1.3 This directive does not prohibit spacecraft customers from operating facility cranes (excluding cab-operated cranes) to lift their own payloads when properly trained.

1.2 Objective

The objective of this KNPR is to implement the operator training, licensing, and relicensing requirements of [NASA-STD-8719.9, NASA Lifting Standard](#), and to document KSC safety policy with regard to training and licensing operators of other special and heavy equipment not specifically referenced in [NASA-STD-8719.9](#).

1.3 Responsibility

Interpretation of the requirements in this KNPR is the responsibility of the KSC Lifting Devices and Equipment Manager. The Director of S&MA is the final authority for interpretation of these requirements.

1.4 Change Recommendations

1.4.1 Change recommendations involving this document shall be submitted to the point of contact identified in TechDoc.

1.4.2 The recommendation shall identify the exact language of the proposed change and the rationale for the change.

Note: KSC S&MA will ensure proper review and disposition of all change recommendations using the Ground Risk Review Panel and the Kennedy Action Tracking System when necessary.

CHAPTER 2. GENERAL REQUIREMENTS

2.1 The Director of S&MA shall establish requirements for training, examination, and licensing/relicensing programs for operators of the KSC-owned or -leased special and heavy equipment, facility cranes, and hoists.

2.2 The Managers of Exploration Ground Systems Program and Launch Services Program and the Directors of Exploration Research and Technology Programs, Engineering, and Spaceport Integration and Services shall provide sufficient insight to ensure their respective contractors establish programs and procedures to meet the requirements of this KNPR and audit these programs and procedures to monitor their performance.

2.3 Managers/Directors of all organizations operating at KSC shall ensure that all personnel in their respective organizations who operate KSC-owned or -leased special and heavy equipment, facility cranes, and hoists have been trained, examined, and licensed/relicensed according to the provisions of this KNPR before operating KSC-owned or -leased special and heavy equipment, facility cranes, and hoists.

2.4 The KSC Chief Medical Officer shall establish medical standards for operators of KSC-owned or -leased special and heavy equipment, facility cranes, and hoists and provide facilities and personnel for the performance of health examinations to determine that operators of special and heavy equipment or facility cranes/hoists meet those standards.

2.5 The cognizant Contracting Officer and Contracting Officer Representative shall ensure their contractors meet the requirements of this KNPR.

2.6 Supervisors of special and heavy equipment or facility cranes/hoists operators shall:

- a. Initiate requests for the operator's examination.
- b. Ensure performance training [on-the-job training (OJT)] is administered.
- c. Ensure all special and heavy equipment or facility cranes/hoists operators under their supervision have valid licenses in their possession for the specific equipment being operated.
- d. Obtain the health medical certification proof of examination after it is returned to the originator.
- e. Certify candidates for particular licenses required to perform their jobs.
- f. Report the loss of licenses to the licensing agency.
- g. Forward licenses for terminated operators or operators who are assigned to operations where licenses are not required to the licensing agency.
- h. Ensure operators maintain their proficiency on special and heavy equipment or facility cranes/hoists.
- i. Ensure operators of special and heavy equipment, facility cranes, and hoists meet the annual relicensing requirements which are covered in [section 3.1](#) of this KNPR.

2.7 Operators of KSC-owned or -leased special and heavy equipment, facility cranes, and hoists operators shall:

- a. Possess valid operator's license while operating special or heavy equipment, facility cranes, and hoists, and show it during license checks, which are covered in [section 3.6](#) of this KNPR.
- b. Turn in operator's licenses to their supervisors upon termination of assignment at KSC.
- c. Report the loss of licenses to their supervisors immediately upon discovery of loss.
- d. Possess a valid state driver (or commercial driver) license, if required, while operating special or heavy equipment, and show it during license checks.

CHAPTER 3. LICENSING, TRAINING, AND CERTIFICATION REQUIREMENTS

3.1 Licensing/Relicensing Requirements

3.1.1 Special and heavy equipment operators and facility crane/hoist operators shall be licensed subject to successful completion of the following basic requirements:

- a. Completed physical examination (as required by the KSC Biomedical Office).
- b. Demonstrated proficiency in operating equipment.
- c. Possession of a valid state driver (or commercial driver) license, if required.
- d. Classroom training.

Note: Computer-Based Training, Internet-Based Learning, or similar instructional program may replace classroom training if an appropriate curriculum has been developed for the specific special and heavy equipment or facility crane/hoist.

- e. Complete written examination on equipment operation.
- f. Performance training (OJT).

3.1.2 Category I operators shall be relicensed annually only after successfully completing requirements 1 through 5 under section 3.1.a.

3.1.3 Category IA and IB operators will be relicensed annually only after successfully completing requirements 1 through 3 under section 3.1.a.

3.1.4 Category II through X operators will be relicensed every 2 years only after successfully completing requirements 1 through 3 under section 3.1.a.

Note: [NASA-STD-8719.9](#) annual training review requirement, if applicable, shall be documented and maintained by the supervisor.

3.2 License Examination

3.2.1 The initial license examination for special and heavy equipment or facility crane/hoist operators shall consist of two parts:

- a. Part One, a written examination of at least ten questions based on information in the operator's training course. Each candidate and examiner shall ensure all missed questions are satisfactorily resolved.
- b. Part Two, a practical demonstration of the candidate's skill and ability to operate the appropriate equipment.

Note: Evidence of satisfactory completion of a qualifying course from a recognized certified school may be accepted in lieu of Part One of the license examination. All candidates shall perform Part Two.

3.2.2 Candidates who fail to qualify shall not be rescheduled for examination for a minimum of 30 calendar days.

3.2.3 If a candidate fails to qualify, the examiner shall immediately notify the candidate's supervisor of the failure and provide recommendations for corrective action.

3.3 Training

3.3.1 Familiarization training for qualified operators shall be scheduled when new types of equipment are introduced.

3.3.2 Organizations that have OJT programs shall be permitted to make formal requests in writing to have learner/temporary permits issued for a period not to exceed 6 months for those personnel undergoing training.

3.3.3 Personnel undergoing OJT training shall:

- a. Have in their possession a learner/temporary permit (or equivalent documentation).
- b. Be accompanied by a licensed operator at all times.
- c. Be permitted to operate equipment as part of OJT only during periods during which no hazardous operations are in process in the same area where the training will occur.
- d. Complete classroom training prior to participating in OJT.

3.3.4 Supervisors shall take and enforce all safety precautions during these OJT training periods.

3.3.5 Candidates who fail the proficiency testing twice shall not be considered for licensing.

Note: Candidates who retake the classroom and performance training may reapply for the proficiency testing.

3.3.6 Candidates who successfully complete the examination shall be issued a license.

3.3.7 The identification or certification number of all types of equipment the candidate is qualified to operate shall be entered by the licensing agency on the operator's license.

3.4 Revocation, Suspension of Licenses

3.4.1 Licenses issued under the provisions of this directive shall be considered for revocation or suspension by the licensing agency for any of the following reasons:

- a. Proof of negligence or abuse of Government equipment, as determined by an appointed panel of inquiry or Mishap Investigation Board.

Note: Requirements for panels of inquiry or Mishap Investigation Boards are defined in [KNPR 8715.3-1](#).

- b. Violations of and/or noncompliance with any of the safety requirements of the latest revision of [NASA-STD-8719.9](#).
- c. Failure to meet standards established by the KSC Chief Medical Officer for the physical fitness required of each employee who operates Government-owned or -leased equipment.

d. Failure to possess a valid state driver license or the suspension of a valid state driver license, if required.

3.4.2 Licenses that have been revoked or suspended by the licensing agency shall be turned in to the licensing agency.

3.5 Lost, Stolen, or Misplaced Licenses

3.5.1 In the event that a license is lost, stolen, or otherwise misplaced:

- a. The loss of license shall be reported immediately to the employee's supervisor.
- b. The supervisor shall notify the licensing agency in writing.
- c. The agency shall authorize the issuance of a replacement license.

3.6 License Check

3.6.1 Prior to all critical lifts, and periodically for non-critical lifts, O&M contractor's designated representative shall conduct inspections to ensure that:

- a. Personnel operating equipment are properly licensed.
- b. Equipment is being operated in a proper and safe manner.

3.6.2 Reports of violations observed during such inspections shall be made, in writing, to the appropriate supervisors.

3.6.3 Periodic checks shall be performed by KSC organizations in accordance with "Responsibilities," defined in this KNPR.

3.7 Exemptions

3.7.1 Personnel shall be permitted to operate the following equipment without a commercial driver license:

- a. Crawler transporters
- b. Solid rocket motor transporters
- c. Equipment operated under security escort
- d. Large Equipment Propelled Transporters

3.8 Maintenance

Without being certified operators themselves, maintenance mechanics following an approved checklist shall be permitted to perform functional checks of equipment after performing maintenance on that equipment.

APPENDIX A: ACRONYMS

KNPR	Kennedy NASA Procedural Requirements
KSC	Kennedy Space Center
O&M	Operations and Maintenance
OJT	On-the-Job Training
S&MA	Safety and Mission Assurance

APPENDIX B: EQUIPMENT CATEGORIES

For the purpose of this KNPR, special and heavy equipment and facility cranes and hoists are categorized as follows:

B1. **Category I - Hoisting**: Mobile lattice boom cranes, crawler cranes, facility cranes and hoists, shipboard pedestal cranes, mobile hydraulic cranes, and crane carriers.

B2. **Category IA - Flight Hardware**: All other heavy or special equipment used to handle flight hardware or used in close proximity to flight hardware (e.g., Critical-Lift powered industrial trucks, tugs, stair trucks).

B3. **Category IB - Mobile Aerial Platforms**: Aerial lifts designed to lift personnel (e.g., Condors, Hi-Rangers).

B4. **Category II - Materials Handling**: All forklifts, pallet stackers, and tugs used in material handling.

B5. **Category III - Construction Equipment (Off-the-Road Type)**: Crawler tractors, clamshells, draglines, trenched/ditching machines, and seal coat applicators.

B6. **Category IV - Construction Equipment (Over-the-Road Type)**: Motor graders, gradalls, front-end loaders, rollers, asphalt distributors, pulver mixers, tractor mounted backhoes, street sweepers (over 8,000 lb.).

B7. **Category V - Fire Fighting and Rescue Equipment**: Fire trucks and rescue tracked vehicles and special purpose vehicles assigned to the Fire Department.

B8. **Category VI - Railroad Type Equipment**: Trackmobiles, locomotives.

B9. **Category VII - Special Purpose**: Utility power line trucks, fuel trucks, water trucks, lube service trucks, sanitation trucks (refuse), special tractors, mobile cleaning facility trucks, cryogenic and hypergol transport equipment, truck vans.

B10. **Category VIII - Farm Equipment**: Farm type tractors, mowers, discs, seeders.

B11. **Category IX - Marine**: Boats and outboard motors.

B12. **Category X - Utility Equipment**: Street paint striping machines and street sweeping machines (under 8,000 lb.).